

## NOTES ON SOME ALBINO BIRDS PRESENTED TO THE U. S. NATIONAL MUSEUM, WITH SOME REMARKS ON ALBINISM.

BY LIEUT. WIRT ROBINSON, FOURTH ARTILLERY, U. S. ARMY.

The following notes refer chiefly to specimens obtained by the writer in Virginia, and presented to the National Museum in February, 1889:

**Sora** (*Porzana carolina*).

(a) Killed September 20, 1870, in Curl's Neck Marsh, James River, Virginia. Nearly perfect albino. Feet and bill pale yellow; irides pink (glass eyes wrong color); a few brownish and buff-colored feathers on flanks, around neck and eyes; sex not determined.

(b) Killed October 2, 1880, in Curl's Neck Marsh, James River, Virginia. All features normal except patch of white feathers covering occiput; sex, male.

(c, d) September 23, 1882, bought two skins from a wagon in Richmond, Va., containing between 900 and 1,000 dozen sora, nearly all "paddled" in Curl's Neck Marsh, on James River. The remarks about the meadow-lark below are applicable to these. A good idea of their coloration would be obtained by supposing that an accurate water-color drawing of a sora were washed out until the darkest colors were somewhere about a buffy, a yellow ocher, and a pale fawn color; bill and feet pale yellow; color of irides and sex not determined.

Among the thousands of sora exposed for sale in the streets and markets of Richmond every fall this phase of albinism is by no means rare. A number of specimens could be obtained each season.

**Meadow-lark** (*Sturnella magna*).

Killed December 19, 1875, in Buckingham County, Va. An approach to albinism, all the markings and mottlings present, but colors have a washed-out appearance, and are of about one half the intensity of those of the normally colored individual. The irides were normal (?) and bill and feet slightly paler. Was with a large scattering flock. Sex not determined.

**Red-winged Blackbird** (*Agelaius phœniceus*).

Killed September 18, 1872, in Curl's Neck Marsh, James River, Virginia. A poor skin, because of decomposition setting in before it was possible to remove it. Perfect albino; feet and bill pale yellow; irides pink; tail feathers badly worn and apparently lifeless, resembling those of the emu wren as given in the wood-cuts of that bird; faint tinge of yellowish pink on shoulders; sex, male.

**Cow Blackbird** (*Molothrus ater*).

November 5, 1881, I saw in Henrico County, Va., in the midst of a large flock, a white cow blackbird, but could not get a shot at it.

**Slate-colored Junco or Snow Bird** (*Junco hyemalis*).

Killed February 24, 1879, in Henrico County, Va. Bill, feet, and irides normal. Isolated white feathers scattered throughout rest of plumage, but these not noticed until after the bird was shot. Sex not determined.

**Field Sparrow** (*Spizella pusilla*).

(a) Killed February 14, 1880, in Chesterfield County, Va. Tail mainly white; white feathers in each wing, rest of plumage normal; sex not determined.

(b) Killed December 3, 1881, at Currituck, N. C., on the beach. Nearly perfect albino; plumage white with a faint buffy tinge on upper parts; bill and feet light yellow; irides pink; sex not determined.

(c) Killed in Chesterfield County, Va., but did not skin, a field sparrow with numerous white feathers scattered throughout plumage.

**House Sparrow** (*Passer domesticus*).

June 12, 1882, saw in the streets of Richmond, Va., an English sparrow with both wings nearly white.

**Cedar Bird** (*Ampelis cedrorum*).

Killed September 29, 1873, on an island in James River, opposite Richmond, Va. Was feeding with a large flock upon sugar berries. An interesting specimen; almost perfect albino; feet and bill pale yellow; irides pink; a few dark feathers in the wings, rest of plumage pure white, except that the yellow tips of the tail feathers and the yellow of the belly and the scarlet wax-drops of the wings remained unchanged; sex not determined.

**Robin** (*Merula migratoria*).

(a) Killed February 26, 1880, in Chesterfield County, Va.; normal feathers profusely intermixed with white ones; all feathers of tail but one white; primaries and secondaries largely white; very noticeable during life, the bird appearing as if sprinkled with snow. Impossible to save skin, except that of neck and head. Irides normal; bill and feet slightly paler; sex, male.

(b) Killed March 17, 1880, in same locality as above; most perfect albino among the lot; plumage entirely white, though badly soiled; bill and feet very pale yellow; irides pink; sex, not determined.

**Bob-White** (*Colinus virginianus*).

November 29, 1881, was shown the white wings of a "partridge," killed in Albemarle County, Va., the rest of whose plumage was said to have been normal.

**Crow** (*Corvus americanus*).

May 26, 1879, saw at a distance, in Henrico County, Va., a crow with a large white spot in each wing; was unable to get a shot at it.

**Turkey Buzzard** (*Cathartes aura*).

March 11, 1882, in Henrico County, Va., saw a turkey buzzard with several white primaries in each wing.

The subject of albinism among birds has always been a matter of interest to me, and I have carefully read whatever I have had access to upon this subject, as well as articles upon the coloration of the feathers and changes of coloration, and albinism in general; but I must confess that such information as I could obtain has been meager and unsatisfactory in the extreme, most authors merely referring to albinism as a fact, and giving no further explanation than that they were ignorant of its causes. Darwin refers to it several times, but discusses it more as a matter of heredity. It is easy to see the difficulty of studying this phenomenon among birds, for, first, its instances are rare; second, when they are met with the bird is immediately destroyed, if possible, and its skin secured; third, the absence of means for ascertaining the changes (if any) that the bird has gone through from the moment it was hatched until it was secured; and fourth, it is hardly probable that a private collector, even during a life-time, should meet with a sufficient number of examples to enable him to draw up with any confidence generalizations from his observations which would include all cases.

We are therefore driven to consider the cases of albinism that we can observe during their existence, and then by analogy apply our deduction to birds. This is unsatisfactory and uncertain.

There is the human albino, too well known to need description; then, among other mammals, instances of hereditary albinism; as, for example, English rabbits, white rats and mice, etc. Among domesticated birds it is rarer; a white plumage made hereditary by interbreeding, as (to take the more recent instances) in white turkeys, guinea hens, etc., not constituting a perfect albinism as we understand it. Considering these cases, we find that for the mammals:

(1) Albinism exists as a freak—has its inception in embryo, exists from the moment of birth, affects, *as a rule*, the entire body and lasts through life.

(2) The negative statement of the above: It is not the result of disease; the whitening of the skin and hair produced by leprosy and kindred diseases not constituting true albinism.

(3) It arises, in the human being, "from the absence of the minute particles of coloring matter which occur in the lowest and last deposited layer of the epidermis."

Now, if we endeavor to apply these conclusions to birds, we immediately meet with difficulties; for instance:

(1) "Albinism exists as a freak, has its inception in embryo, exists from the moment of birth." (Since the receipt of your favor of the 12th ultimo,\* stating that there are in the National Museum several specimens showing that some albinos are hatched pure white, we must without hesitation admit that much; but does it follow that all albinos are

\* Reference is here made to a letter from the Curator of the Department of Birds.

so from the moment they are hatched? Are we to consider that the pied and spotted specimens among those which I have collected were always in that condition? \* Can we not suppose with equal confidence that they were originally normally colored, and that as their feathers were lost by molting, they were replaced by white ones, and that finally by this process of substitution albinism was produced? This does not seem stranger to me than the provision of nature by which the feathers of the ptarmigan, at one season mottled, are, at the next, replaced by white ones, the latter growing from the same papules, supplied by the same blood vessels, etc. And this theory would seem to be further confirmed by the fact that sometimes in albinos, perfect in every other respect, there are found one or two feathers normally colored, and the remainder of the plumage of snowy whiteness, as if in molting. These one or two feathers had, so to speak, stuck and remained over another season. How else can we account for their color, when all the contiguous feathers, which we have every reason to suppose are in the same physical condition, are white?) "It affects, *as a rule*, the entire body." This must be cautiously received when referring to birds. How can we account for the spotted and pied specimens?

(2) "It is not the result of disease." I do not know enough about this matter to enter into any discussion upon it, still, in the case of the meadow-lark and two pale-colored sora, it almost seems as if the coloring matter was being gradually withdrawn or re-absorbed from the feathers, causing them to fade.

In the cases of albinism which I have observed yellow seems to be the color least affected.

By a study of an extensive series of albinos, such as I have not had access to, a great many interesting facts would be developed in regard to the coloring of feathers. Thus, it is stated that certain blues, violets, and greens are not due to the pigment (which is gray), but to surface structure of the feather. Therefore, the feather of an albino of a species of parrot having such colors, when dipped into a grayish tincture, should reproduce those blues, violets, and greens, if the first statement be correct. If I recollect, it was Dr. Wollaston who discovered that the brilliant colors of the "speculum" of such ducks as the common mallard were produced in the same way that the spectra are produced in optics, by light reflected from the surface of a highly polished piece of speculum metal, which has been ruled with microscopically fine parallel lines. For this reason, I have always looked out for an albino of such a duck, but have never yet had the good fortune to meet with one. It would be highly interesting to test this matter by staining the feather of such an albino a light gray.

\* There can be no question that some albinos, or partial albinos, were at a previous stage of their existence normally colored. I have had personal knowledge of such cases, and have even seen a melanistic robin (*Merula migratoria*), entirely black in its first plumage, assume numerous perfectly white feathers after a molt, and believe that the bird *might* have eventually become an albino, though its premature death prevented further observation.—R. RIDGWAY.